Solving with substitution

Sometimes you can find the limit just by plugging in the number that your function is approaching. You could have done this with our original limit example, $f(x) = x + 1$. If you just plug 5 into this function, you get 6, which is the limit of the function. Below is another example, where you can simply plug in the number you're approaching to solve for the limit.

Example

Evaluate the limit.

$$\lim_{x \to -2} x^2 + 2x + 6$$

Plug in -2 for x and simplify.

$$(-2)^2 + 2(-2) + 6$$

$$4 - 4 + 6$$

$$6$$

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